ABSTRACT

Recrystallized lead and lead alloy positive current collectors and connectors such as straps and lugs for use e.g. in lead acid batteries and electrowinning anodes, having an increased percentage of special grain boundaries in at least part of the microstructure, which have been provided by a process comprising of (i) cold or hot rolling or cold or hot extrusion or (ii) steps of deforming the lead or lead alloy, and subsequently annealing the lead or lead alloy. Either a single cycle of working and annealing can be provided, or a plurality of such cycles can be provided. The amount of deformation, the recrystallization time and temperature, and the number of repetitions of such steps are selected to ensure that a substantial increase in the population of special grain boundaries is provided in the microstructure, to improve resistance to creep, intergranular corrosion and intergranular cracking of the current collectors and connectors during battery service, and result in extended battery life and the opportunity to reduce the size and weight of the battery.